Technology Department

Catawba County Government Technology Strategic Plan Executive Summary

Submitted by
IT Governance Committee
June 2007

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For complete plan and other information visit: http://www.catawbacountync.gov/depts/itc/itd.asp

Executive Summary

Introduction

Both internal and external environments of Catawba County are changing, and technology is a critical supporter of the development, implementation and enhancement of County services. This makes it imperative that there is an overall approach for the selection, use, and support of technology that aligns with County resources, business needs, and processes.

Catawba County's Strategic Technology Plan provides direction for addressing both short-term needs and long-term requirements for cost-effective, practical technological solutions. Through the investment in and use of advanced technology, the County can place a strong emphasis on both external and internal customer services.

As is the case with all strategic plans, this plan is a "living document" which allows for changes over time and serves as a broad guideline for action. The nature of technological advances and changing County needs will mandate plan revisions. The plan is designed to link the County's needs and goals with information technology to provide improved government functions and enhanced customer service.

Catawba County's Strategic Information Technology Plan provides a framework for the effective management of Information Technology (IT). The primary goal of IT is to support the business objectives of the County and to facilitate departmental efforts to provide efficient and effective services to the citizens, businesses, and visitors of Catawba County. The plan also provides a foundation for an enterprise-wide approach to the management of information technology. Catawba County is a leader among local governments as it has moved from a silo approach (department-specific) to a process-oriented environment (cross-cutting services focused on the clients of government) with some of its recent projects.

Many future technology efforts will cross multiple departments with a single goal of providing services to the public, businesses, and visitors of Catawba County. This environment requires technology to be used as the basis for communication, interoperability, data and resource sharing. Furthermore, technology is a vehicle through which cost reduction can occur by increasing efficiency and effectiveness of services through the use of an enterprise architecture and standards.

This plan is not intended to limit department autonomy but rather to provide a comprehensive roadmap focused on solving common problems and enabling collaboration. The plan is built on the IT management model which utilizes the

best features of both centralized and decentralized IT management, support and decision making. The plan also requires the development of the IT architecture and standards which are critical for true economies of scale to be reached and for interoperability to occur.

The development of the strategic plan involved many steps including reviews of studies and assessments of the technology department, reviews of other strategic plans, and reviews of current trends in local government and technology. The plan was developed through a participatory committee process, allowing input from all areas on County Government.

Current Trends

During the process the committee reviewed major trends in local government. Most are geared toward providing cost-effective, quality services to the public. Catawba County has long been a leader in these areas and studying the trends only helps enhance what is presently being done. Current trends in local government include: benchmarking and performance measurement; customer service and providing a high-quality product for citizens, businesses, visitors and employees; economic development and its critical connection to data infrastructure; outsourcing and the ability to extend current staffing resources; responsive government based on new technologies and new ways of conducting business; and finally, the use of technology by forward-thinking governments to continually enhance service delivery and foster a "work smarter not harder" approach.

Besides local government trends, current trends in technology were also considered in this plan. Again, Catawba County with its significant investment in technology is a leader. Current trends in technology include: a transition to a digitally converged world in which almost all aspects of telephony, television, video, audio, and other communication technologies are converging into a single digital platform; an increasing need to support legacy systems while new systems are being implemented; an increased importance on computer and telecommunications security; management and investment in information technology to support business functions; the constant growth and expansion of a mobile workforce; and resource consolidation in the form of servers, virtual technologies and SAN storage.

**Information and Technology Governance Committee**

The Information and Technology Governance Committee was formed early in the planning process to provide input and direction for developing a strategic plan for technology. The committee consists of representatives from each department that is either the department head or his/her designee. The purpose of the committee is twofold:

- To recommend policy direction on a countywide basis for all information technology, including voice and data communications. The committee will review information and office automation needs and recommend to the County Manager direction and priorities consistent with the long-term mission, goals and objectives that have been established for the County.
- To obtain broad organizational support for information systems efforts.

In efforts to determine the technology needs of Catawba County Government and stay abreast of new technologies, the IT Governance Committee receives input from a number of other groups, committees and sources. These include: the Board of Commissioners, County Management, citizens, departments and numerous committees, as well as, researching mandates, critical issues and new technologies.

Technology Direction

The Strategic Plan sets forth the technological direction for Catawba County. It provides the vision, mission, objectives, and principles that guide each decision. Technology supports the business needs of the organization and through this document processes are defined to better understand and support those business needs.
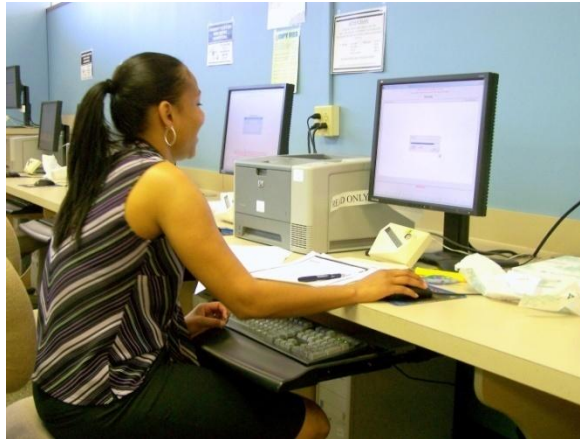
The vision of Catawba County Government is to embrace technology to improve service and efficiency, and provide seamless access for the public. This will be accomplished in a spirit of customer service, partnership, and consultation with our stakeholders. Our guiding principles are quality, creativity, innovation, integration, and cost effectiveness.

The mission of the Technology Department is to provide leadership and guidance in all aspects of technology to enhance government services.

In order to accomplish this mission, Catawba County has enumerated eleven objectives to guide IT activities and maximize their benefits.

Empower	Place information, tools and resources in the hands of citizens and staff that allows them to make informed decisions.

Consolidate	Eliminate duplication and improve the utilization of existing IT resources.

Create	Deploy innovative, value-added technology solutions to meet County core missions.

Expand	Increase the number and quality of online services available to citizens, local government, businesses, educators, and other constituency groups.

Verify	Ensure maximum availability of systems and maximum results from County projects.

Add Value	Increase the value of electronic data and information.

Integrate	Solve common business problems through shared applications.

Collaborate	Encourage business and technology architectures that drive improved planning and coordination.

Improve	Incorporate technology best practices into County processes and procedures.

Protect	Protect the lives and safety of citizens, and safeguard their privacy by maintaining confidentiality and security of electronic documents and by providing technology that enhances their personal safety and security.

Save	Maximize buying power on commodity technologies and services by leveraging economies of scale to reduce expenditures.

In addition to the above, the IT Governance Committee has adopted a set of principles to aid in making decisions. Catawba County's Technology principles represent an integral part of the overall framework of the vision, strategy, mission, and values that guide the selection, deployment, and utilization of information technologies. These principles form the philosophy that informs and shapes technology decision making and provides criteria that governs the actions

of decision makers and employees in performing their work. While not included here, the principles can be found in the plan.

Changing Roles of Technology

Not only do the vision, mission and principles mark a significant departure from the traditional governmental approach, the role of IT is changing. In the past, IT was that group of individuals that kept the technology running. They installed machines and wrote programs. While IT still provides those services, they are now expected to learn business processes and help design new and better ways to use technology. They are faced with the complexity of today's IT technology environment, where linking and integrating disparate technologies have largely replaced deep focus on any one technology. IT personnel are interacting with other IT staff, business constituents, and management in ways they have never needed to in the past. These new roles require staff members with strong verbal and written communication skills, analytical talent and process skills, and business smarts.

As Catawba County Government moves into the future, IT must become more involved with the departments in a different way and be able to analyze the business process and flow and then to make recommendations. The IT department must be able to understand all the systems, how they interact and promote the value to the enterprise as opposed to a departmental approach.

Technology Department Organizational Structure

The Technology Department currently has 52 total staff positions, 21 in the IT Division, 5 in the GIS division and 26 in the E-911 Center. The total operating budget for 2006-07 is $ 3,749,306 million, which includes $ 2,593,040 million in the IT and GIS Divisions and $1,256,266 million for E-911. The E-911 Division operates three shifts around the clock for emergency communication services.

The Technology Department structure consists of four distinct divisions and three overlapping divisions. The four distinct divisions are: Application Systems Development, Operations, Geospatial Information Services, and E911 Communications. The three overlapping divisions are: Administrative, Database Management, and Customer Support.

The Administrative Team is made up of the Chief Information Officer and the leaders of the Application Systems Development Team, Operations Team, GIS Team, and E911 Communications Team. This team provides the leadership and guidance for all the other teams.

Since the services and personnel of the Database Management Team and the Customer Support Team cross both the Application Systems Development Team and the Operations Team, they are subdivisions of the major divisions.

Recently Completed Studies

The Catawba County Technology Department has recently completed or been the subject of a number of studies concerning the state of technology in the County. These studies provide vital information into the strengths, weaknesses, and opportunities that exist. Specifically the plans reviewed and that contributed to this plan were: The Strategic Opportunity Assessment Report (SOAR),February 12, 2005; The Catawba County Technology Disaster Recovery Plan, July 2006; The Catawba County Web Page Design Plan, July 2006; The Catawba County Technology Staff Evaluation Report,September 2006; SWOT(Strengths, Weaknesses, Opportunities, Threats), March 2007.

Some points revealed in these studies include:

- Refocus the Catawba County Internet site from an inward "all about the county government" to an outward "all about Greater Hickory" web presence.
- Focus on partnerships between Catawba County, the municipalities, and the school systems.
- Leverage technology to facilitate the transition of County leaders in the areas of strategic planning, business planning and performance management.
- Consider the addition of a project manager/ consultant position.
- Consider establishing a fulltime security position.
- Leverage investment with providers to contribute to the creation of a community network.
- Investigate partnerships/ contractual relationships with application service providers.
- Increase investments and collaboration in community facing, community building applications.
- Collaborate with other government entities to bring networks and infrastructures together into a shared, more efficient structure.
- Implement a disaster recovery plan that provides for a duplicate-mirror site using virtual technology.
- Consolidate servers using virtual server technology to decrease rising support cost and to provide a more stable, redundant environment.
- The infrastructure provides for a 100MB LAN speed that could be increased to Gigabit speeds. It is recommended that future planning for infrastructure consider.
- It is recommended that the Password Policy be updated to industry standards and put into practice.
- Force storage on the servers so the data would be backed up and provide training for end users to ensure proper storage of data on the servers.
- Continue to improve security functions on all platforms. Strictly enforce policies and procedures when violations are detected. Regularly let users

know the importance of keeping their passwords secret. Let users know how to choose strong passwords that are very difficult to guess.

- Use a common website design template for the website that clearly states the disclaimer and the security notice.
- Provide a common tool for website development.
- Add features to the website such as enewsletters, subscriptions, RSS feeds, and podcasts.
- Add multiple languages option to the site.
- Strengthen the project management skills of the staff.
- Implement technology best practices and information life-cycle management processes.
- Create an environment in which creativity and innovation is embraced.
- Increase the level of training for the technology staff.
- Work to reduce staff load by consolidating applications where possible and by using better management techniques.
- View workload and staff decreases on an enterprise basis, not just on a department by department basis.
- A base level of architecture and standards coupled with recent investments in VoIP and SAN technology provides a good foundation for future projects.
- There is a strong commitment from Administration for technology plus high quality people on staff.
- A high-quality World Wide Web presence for citizens, visitors, and employees with extensive Geospatial Information Services (GIS)
- There is a need for a business analyst
- There is a lack of a mature governance structure and a project justification process.
- There are many opportunities to consolidate servers, applications, and services, as well as, build on existing investments.
- NG911 and interoperability could increase Public Safety service levels.
- Security is a never ending concern at all levels.

Setting Strategic Initiatives

A planning session was conducted with the IT Governance Committee on March 15, 2007. During this session, the committee referenced the work on the prior meetings and looked at several questions. First they looked at successful County projects and why they were successful. Then they looked at problems along with citizen related issues that the County currently is, or will face. Finally they looked at areas that should be addressed in a long range strategic plan. This session was followed up by sending the same questions and notes from the meeting to department heads for their input.

Below are some of the areas that should be addressed in the plan:

- Expand web and online development by marketing services efficiently, by providing better translation tools, by providing a uniform method for online payments, and by expanding the delivery of online services,
- Encourage enterprise solutions while providing for unique business needs per department. Build efficient internal processes to optimize operational procedures while maximizing data/information sharing and minimizing redundant data entry. Eliminate duplication of effort.
- Partner with providers, municipalities to improve services to the public. Encourage a wireless community infrastructure. Ensure secure, accurate, timely data information. Increase support for a mobilized community. Utilize technology to improve public information efforts
- Build upon the technology that we have and utilize best practices. Incorporate GIS more as technology changes. Use standard development tools and web applications. Build a common data warehouse.

By putting in place a long strategic term plan that supports the goals of the County Commissioners and aligns with the anticipated needs of the citizens, technology can play a pivotal role. Building the infrastructure and putting best practices forward now will prepare Catawba County Government for this eventuality.

Strategic Initiatives

Strategic Initiative 1

Empower the Public: Enable the public to interact with local government by providing secure access to information and the ability to efficiently conduct appropriate business 365/24/7.

Initiative 1.1

Create web based systems that provides secure, accurate and timely information to the public: Information in government systems is crucial to the operations of many businesses in Catawba County. Much of this information represents the public. Users have a right to timely and accurate information and the public has a right to know that their information is secure.

Initiative 1.2

Initiate an enterprise wide solution to online payments: Online/electronic payments are quickly becoming the norm in money transactions replacing cash and check systems. While online payments offer significant

challenges for local government, they must offer these services to meet the expectations of the public. To provide consistent service and maximize return, one system, an enterprise solution should be implemented.

Initiative 1.3

Provide multiple, media rich methods to the public for accessing and receiving information: Traditionally local government has relied on press coverage, radio and TV coverage, event attendance, and web pages to communicate with the public. While these methods have been effective and must be maintained, new communication avenues are available that relate better to the public embedded in the technical world. Catawba County should expand the current RSS(Really Simple Syndication) and subscription offerings, as well as, adding podcasts.

Initiative 1.4

Provide web enabled applications for the public to use: People looking for information on Catawba County's web page want more than to be able to generate canned reports, they want to ask questions and have the system respond appropriately. As applications are created or upgraded, Catawba County should provide as many web enabled applications as possible. This will allow the public to access the data and look at it in the format that he/she wishes.

Strategic Initiative 2

Improve outcomes, efficiency, responsiveness, and agility of services by transforming the management of information technology through best practices and shared resources.

Initiative 2.1

Implement Enterprise Architecture across the County: The County should move from "silo" applications and processes to enterprise applications and processes. Enterprise architecture is the practice of applying comprehensive and consistent methods across the entire County so that business processes align with the organization's core goals and strategic direction. Catawba County has made significant strides to standardize on a common platform and that work should be encouraged and extended into other areas.

Initiative 2.1a

Maximize the County's investment in Peoplesoft by using it as the preferred development and delivery platform: PeopleSoft is a powerful platform. Currently the County uses it for HR and Finance. All County employees have access to at least the payroll functions. The platform must be maintained

for these applications so it is a good candidate for expansion as an enterprise solution.

Initiative 2.1b

Maximize the County's investment in VoIP by ensuring that future systems integrate with the system: VoIP offers many features and opportunities. As the County upgrades other systems such as radio communications, the upgrades must be reviewed as one consistent system with built in interoperability and not as disparate systems.

Initiative 2.1c

Maximize the County's investment in virtual technology: Virtual technology allows for server consolidation and better management of server and storage resources. It is also a crucial part of an effective disaster recovery plan. Catawba County has made a significant investment in virtual technology and disaster recovery tools. The County should continue to enhance and expand this technology while at the same time eliminating the more costly individual server technology.

Initiative 2.1d

Institute Life Cycle Management(LCM) methodology across the County: Life Cycle Management methodology provides procedures for application development or vendor provided software from the concept phase until the end of the useful life of the product. It applies one consistent set of rules across the enterprise for decision making at all critical points. Using LCM, projects are better defined and all parties involved know what is expected at all times. This helps reduce risk to the project and ensures that the project delivers according to the specifications.

Initiative 2.1e

Continue to apply application, equipment and replacement standards across the County: Catawba County Government has equipment standards in place for all hardware purchases as well as a desktop replacement standard of every 5 years. Standards are also in place for desktop configurations and productivity software.

Initiative 2.1f

Capture once, use many: The County should move to a standardized data environment where data is collected once and utilized many times. This "capture once, use many" concept reduces duplication, inconsistencies and errors.

Initiative 2.2

Formalize an IT Governance Structure: IT Governance is becoming an increasingly important topic in the public sector. The role of the IT Governance is to ensure that IT is aligned with the business and delivers value, its performance is measured, its resources properly allocated and its risks mitigated. The IT Governance structure should be composed of department heads and senior leadership in order to assist the IT Department with project prioritization, goal alignment, and risk management.

Initiative 2.3

Use Project Management Methodology on all projects to maximize the success rate: Project Management Methodology provides proven methods for defining projects, resourcing projects and managing the risks associated with those projects. Using this methodology, projects have a better chance of success from the beginning and a better chance of achieving the desired outcomes in the end.

Strategic Initiative 3

Transform key business processes through the effective use of innovative technology and state-of-the-art software.

Initiative 3.1

Enable an increasing mobile workforce: Many duties performed by County employees require them to be away from an office environment. Keeping them in the field more hours reduces cost and provides better service for the public. The County has expanded the number of remote workers and has provided them with the tools necessary to do their job. Remote workers are defined to be those that maintain an office environment at some location other than a government facility. Mobile workers are defined as those who perform their duties in the field on a regular basis. The County should continue to support this mobile workforce.

Initiative 3.2

Continue to invest in SAN /Disaster Recovery technology to meet growing storage needs: As governments continue to collect data and information at an

exponential rate, and subsequently store that data within the information systems, computing resources become strained. Catawba County has invested in a Storage Area Network (SAN) in order to house the data off the main technology resources, thereby extending their usefulness and reducing future expansion costs. The County should build on this platform in the future.

Initiative 3.3

Implement Web Enabled Applications where feasible: Web enabled applications are hosted on a server connected through internet. This means that they can be accessed from any location with a web browser and internet connection. This allows more people to share the data located on centralized server. Since the application is hosted on a web server, security, application upgrades and maintenance are controlled and operating cost are lowered

Initiative 3.4

Build a seamless interface for public safety across the County and municipalities: When dealing with an emergency situation, seconds could mean life or death. It is imperative that responding agencies have access to information and be able to communicate with each other. The County should encourage that all purchases by each of the entities be made in conjunction with this initiative.

Initiative 3.5

Leverage advanced GIS technology to enhance existing systems and integrate geospatial capabilities as a fundamental component of business systems where appropriate: The County has always been viewed as a leader in geospatial technology. Over the years it has made significant investments in these technologies.   The payoff for these investments is a very powerful database of GIS data. Today, many applications in all areas of government have a GIS component. Catawba County should leverage its investment in GIS and integrate it where ever it would provide better information for the public and for our workforce.

Strategic Initiative 4

Leverage innovative partnerships to offer better services.

Initiative 4.1

Encourage technology initiatives that provide better services and opportunities for the public. Technology is now infused into every area of people's lives. It is important that the public is afforded the opportunities that come with that technology and that it is used responsibly. The County should encourage private and public/private initiatives that expand opportunities for the public.

Initiative 4.1a

Encourage broadband services to all homes: While Catawba County is viewed as a very progressive county, there are still many areas where our citizens do not have inexpensive access to broadband services. The County should work with private entities to ensure that services are provided.

Initiative 4.1b

Partner with local service groups to recycle computers and other technologies: Every year computers and other technologies are replaced because they do not have the resources to support current day to day operations. This technology could be recycled back to the community through partnerships with local service groups. These groups, working in conjunction with the schools, Habitat for Humanity, Social Services, and other agencies, could place some of the technology into the community where it would benefit our citizens.

Initiative 4.2

Partner with the school systems, municipalities and other agencies to offer services that are common to all: Local government agencies and the school systems have many common technology needs. Working together, will ensure that infrastructure, operating systems and applications will be interoperable and scalable. Purchases of hardware and software can take advantage of quantities of scale while affording smaller agencies the same opportunities as larger agencies.

Strategic Initiative 5

Empower the Workforces: Enable personnel by increasing the efficiency and agility of the systems they depend on.

Initiative 5.1

Provide training opportunities for end users that go beyond the basics and empower users to be self sufficient: Approximately sixty percent of the variance in technology project's success or failure can be attributed to the training available to end users. However, governments often view training dollars as expendable resources, not recognizing the connection between training and project success and return on investment. In order to increase technology adoption and to facilitate successful technology solutions for the departments, investments in end user training are critical. Investments should be made in a variety of technology areas, including the basic Microsoft Office suite, enterprise packages, and department-specific packages. All new technology deployments should include a detailed training plan that addresses the variety of learning styles within the County. Training is critical and should be adequately funded using best-of-breed training approaches.

Initiative 5.2

Ensure a well trained Technology staff: The County has made significant investments in training its IT professionals. However, that investment must be continued in order to maintain and update staff skill sets. In addition, with the rapid change of technology and the increasing complexity associated with information technology policies, procedures, and practices, it is critical that staff continue to engage in technical and managerial professional education opportunities.

Initiative 5.3

Transition the Mobile Workforce: Being able to function and perform expected duties in a mobile environment can prove challenging to personnel. The training and the infrastructure for remote workers must be viewed differently than that provided to traditional workers. Mobile workers must be trained in not only how to run the software, but trouble shooting the computer, security issues related to being mobile, and how to connect to the services they need.

Initiative 5.4

Expand online employee services and recruitment: Catawba County offers many online services to its employees. These include online time sheets, paychecks, benefits summary, pay history, and more. Online recruitment now allows potential candidates to apply online. The County should expand these services to include online benefit enrollment and increase business process flow.

Strategic Initiative 6

Improve public safety by leveraging modern information systems and technology.

Initiative 6.1

Make security and confidentiality overriding priorities in all systems. The County maintains extensive data bases and records in its day to day operations. While much of this information is public record, personal data also resides here that is not public. Basic identity theft has made it more important than ever that proper security and confidentiality be maintained with these records. The County must constantly monitor its equipment, its applications, and its interfaces to ensure the digital safety of the information that the public has entrusted us with.

Initiative 6.2

Build a reliable communication network that provides for interoperability across the County. The County has a reliable radio network in place but it is limited by several factors, 1) it is a voter receive system that leaves some areas without communication depending on which tower signals originate from, 2) Hickory has an 800 Mhz system which does not allow for communications between Hickory PD and other emergency services, and 3) there is no data capability in the current system. Each of these areas diminish the level of service that can be provided by Public Safety and need to be addressed.

Initiative 6.3

Provide multiple options for the public to secure services: The current technology was built for voice and fixed phone lines. The Communications Center has been updated to locate wireless customers but it is still limited given the many ways people can communicate today. New technology allows users to connect through the traditional phone methods and extends capability to text messaging, instant messaging, audio and video files. The technology allows data files to be received from any outside source with access to the Internet and facilitates the movement of that data to the appropriate source. All areas could benefit by embracing the new technologies.

Initiative 6.4

Build in redundancy to the network infrastructure: Today's operations are highly dependent on technology and the underlying infrastructure. Many of these systems interact with another to provide information and dispatch resources. It is critical that all single points of failure be eliminated from the infrastructure and that redundancy be built into the network.

Conclusion

The Catawba County Technology Strategic Plan provides a framework for the effective management of technology. It offers a customer focused approach to implementing and managing technology from both an internal and external perspective. Internally it focuses on collaboration, shared input and providing the right tools for our employees. Externally it focuses on providing services that are expected by the public in today's world.

That world has seen an incredible amount of change in technology and the ways people live and interact with it in the past few years. Catawba County has always been viewed as a progressive county that strives to use the latest technology to enhance the services provided to the public. The vision and efforts of County leadership should be commended since many of the past investments now provide a strong platform to move forward with the initiatives in this strategic plan.

The plan is dynamic in that it provides guidance in making technology decisions but like a map, allows the County to choose the best options to reach its goals. All technology decisions should be made from a strategic view point based on the initiatives set forth in this document. This ensures that all decisions can be made in an environment of flexibility but that the end result achieves the goals and expectations set by the County.

As the County moves into another exciting period of changing expectations, of growth, and of opportunities, it is critical that technology serve as a tool for improving efficiency and effectiveness, as well as, contributing to the safety and welfare of the public. Technology will allow the County to respond quickly to the demands of the increasing growth and needs that come with it. The future of Catawba County is encouraging and the administration and staff recognition of the value of technology only serves to enhance the potential of the County and reinforce its role as a leader among North Carolina local governments.

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